

I claim:

1. A method of providing a cooled blower unit, comprising the steps of:

rotating a feed air impeller in a casing, said casing having an casing inlet and at least one aperture outlet;

rotating a cooling air impeller at a rear of a motor and said feed air impeller at a front thereof;

providing a shroud having a chamber adjacent said casing, said motor being retained in said shroud, providing at least one passage from said chamber to a shroud outlet in said shroud;

retaining said shroud in a housing, forming at least one air opening and a housing outlet in said housing, said housing outlet receiving said shroud outlet;

rotating said cooling air impeller to draw inlet air through said at least one air opening, said inlet air flowing between said motor and said shroud, said inlet air flowing out of said shroud and said housing; and

rotating said feed air impeller to draw said inlet air between said shroud and said housing into said casing inlet, said feed air impeller forcing air through said at least one aperture outlet to said housing outlet.

2. The method of providing a cooled blower unit of claim 1, further comprising the step of:

providing said housing with a first housing half and a second housing half, said at least one air opening and said housing outlet

being formed in a front of said first housing half.

3. The method of providing a cooled blower unit of claim 2, further comprising the step of:

forming a recess in a bottom of said second housing half.

4. The method of providing a cooled blower unit of claim 3, further comprising the step of:

providing said shroud with a lower shroud half and an upper shroud half, forming a discharge passage in said lower shroud half, said discharge passage communicating with said recess to exhaust said inlet air from between said motor and said shroud.

5. The method of providing a cooled blower unit of claim 1, further comprising the step of:

attaching a portion of said casing to said motor.

6. The method of providing a cooled blower unit of claim 1, further comprising the step of:

rotating said feed air impeller in said casing to form an air compressor.

7. A method of provided a cooled blower unit, comprising the steps of:

rotating a feed air impeller at one end of a motor and a cooling air impeller at the other end of said motor;

containing said feed air impeller in a fan casing, forming a plurality of apertures through a cylindrical wall of said fan casing, forming a feed inlet opening through a front wall of said fan casing;

containing said fan casing and said motor in a shroud, said shroud including a guide chamber adjacent said plurality of apertures, forming at least one tubular passage in said shroud that communicates with said guide chamber, said at least one tubular passage communicating with a feed air outlet in a front of said shroud;

retaining said shroud in a housing, forming at least one air inlet opening and an air discharge outlet in said housing, said air discharge outlet receiving said feed air outlet;

rotating said cooling air impeller to draw inlet air through said at least one air inlet opening, said inlet air flowing between said motor and said shroud, said inlet air flowing out of said shroud and said housing;

rotating said feed air impeller to draw said inlet air between said shroud and said housing into said feed inlet opening, said air impeller forcing air through said plurality of apertures and said at least one tubular passage to said air discharge outlet.

8. The method of providing a cooled blower unit of claim 7, further comprising the step of:

providing said housing with a first housing half and a second housing half, said at least one air inlet opening and said air discharge outlet being formed in a front of said first housing half.

9. The method of providing a cooled blower unit of claim 8, further comprising the step of:

forming a recess in a bottom of said second housing half.

10. The method of providing a cooled blower unit of claim 9, further comprising the step of:

providing said shroud with a lower shroud half and an upper shroud half, forming a discharge passage in said lower shroud half, said discharge passage communicating with said recess to exhaust said inlet air from between said motor and said shroud.

11. The method of providing a cooled blower unit of claim 7, further comprising the step of:

attaching a portion of said fan casing to said motor.

12. The method of providing a cooled blower unit of claim 7, further comprising the step of:

rotating said feed air impeller in said fan casing to form an air compressor.

13. A method of providing a cooled blower unit, comprising the steps of:

rotating a feed air impeller at one end of a motor and a cooling air impeller at the other end of said motor;

containing said feed air impeller in a fan casing, forming a plurality of apertures through a cylindrical wall of said fan casing, forming a feed inlet opening through a front wall of said fan casing;

containing said fan casing and said motor in between a lower shroud half and an upper shroud half, said first and second shroud halves including a guide chamber adjacent said plurality of apertures, forming at least one tubular passage in at least one of said lower and upper shroud halves that communicates with said guide chamber, said at least one tubular passage communicating with a feed air outlet in a front of said first and second shroud halves;

retaining said first and second shroud halves in a first housing half and a second housing half, forming at least one air inlet opening and an air discharge outlet in a front of said first housing half, said air discharge outlet receiving said feed air outlet;

rotating said cooling air impeller to draw inlet air through said at least one air inlet opening, said inlet air flowing between said motor and said lower and upper shroud halves, said inlet air flowing out of said lower and upper shroud halves and said first and second housing halves;

rotating said feed air impeller to draw said inlet air between said lower and upper shroud halves and said first and second housing halves into said feed inlet opening, said air impeller forcing air through said plurality of apertures and said at least one tubular passage to said air discharge outlet.

14. The method of providing a cooled blower unit of claim 13, further comprising the step of:

forming a recess in a bottom of said second housing half.

15. The method of providing a cooled blower unit of claim 14, further comprising the step of:

forming a discharge passage in said lower shroud half, said discharge passage communicating with said recess to exhaust said inlet air from between said motor and said shroud.

16. The method of providing a cooled blower unit of claim 7, further comprising the step of:

attaching a portion of said fan casing to said motor.

17. The method of providing a cooled blower unit of claim 13, further comprising the step of:

rotating said feed air impeller in said fan casing to form an air compressor.